

Notes on Organizational Burden

(to go with Table 1.iii.9, Volume 1)

In table 1.iii.9 (reproduced as table 4 below), we record the FY 15-17 costs associated with operating NSLS-II. These are split into two categories, those paid from BES-SUF funds and those from Other Funding sources. The former includes the Beamlines Developed by NSLS-II and the NSLS-II Partner Beamline work that was funded by BES-SUF funds, as well as the operations work. It does not include NSLS-I operations funded work, the NSLS-II construction project or NEXT funded work. Other funding source work is operations work funded by others. This includes BER/NIH funding of beamline operations (LSBR grant), LDRD work, proprietary work, SPP work, the ALD account and the HEX project. It does not include ABBIX construction work.

The table records the costs borne by these funds and the FTEs that did the work. The costs are recorded where they occur, and the FTEs are recorded where the work was done. In general these are the same place, but that is not always true. The difference is work funded by organizational burden. One example of this is business operations admins which appear as FTEs in the Facility and Management and Business Operations part of the table, since that is the work they are doing, but they are not all paid for out of the Facilities budget. Most are paid for by “org burden” which allows us to spread the costs of these functions equitably over all who share the benefits. As a result, these FTEs appear to have no cost to the Facility’s budget (for example in FY17 there were 11.1 FTEs of Admin at a burdened cost of \$18.7k). This note explains organizational burden and how it is dealt with in table 1.iii.9 of volume 1.

Organizational burden is a small overhead that is charged on work carried out at NSLS-II (the exception to this are defined projects, such as NEXT which are direct charged). This org burden pays for common functions that benefit the whole facility, and that cannot be directly associated with a single grant. An example of this would be the business operations group which tracks funding and costs, and other business issues for the whole organization. All work benefits from this and it is not practical to bill individual grants for the work. Instead we spread the costs equitably amongst all. We do this by charging the org burden, which is assessed on labor.

We collect org burden on all relevant work, including BES-SUF funded work and use the budget generated to pay for the common costs (examples include some management, some ESH&QA costs, most of business operations and some HR). This overhead increases slightly the salary multiplier that is charged on an NSLS-II FTE. The org burden rate was 7.43% in FY15 and 8.83% in FY16. It is currently 9.5% in FY17 (note, org burden generated funds cannot be carried over into subsequent fiscal years, so at the end of the year, any excess are returned in the form of a “spreadback” or a retroactive reduction in the rate). The rate and the methodology are both reviewed by the BNL Budget Office and the Brookhaven Site Office.

The org burden is part of the burdened cost of BES FTEs in the rest of the organization. For example, if in the accelerator division there is an employee being paid a salary of \$100k, then the burdened cost of that employee in FY16 was \$219k to the accelerator operations budget. This is recorded in the burdened cost of accelerator operations. Of this \$219k, \$12.3k was org burden (table 1.iii.4 in vol 1, reproduced as table 1 below for clarity).

FY2015 Operation Fund-Based on Y/E rates						
Item	Base Applied	Based Amount	Rate	Cost		Published rate
Base Salary Cost				\$ 100,000		
Paid absence						
Fringe	Base Salary			39.0% \$ 39,000		39.0%
Total Direct				\$ 139,000		
Org Burden	Total Direct	\$ 139,000		7.43% \$ 10,328		
Distributed Power	Total Direct	\$ 139,000		0.85% \$ 1,182		
LDRD	Total Direct & org burden	\$ 149,328		3.70% \$ 5,525		3.70%
Common Support G & A	Total Direct & org burden	\$ 149,328		31.95% \$ 47,710		31.95%
Traditional G & A	Total Direct & org burden	\$ 149,328		7.22% \$ 10,781		8.25%
Total Fully Burdened Cost				\$ 214,526		
Labor Multiplier					2.14526	

FY2016 Operation Fund-Based on Y/E rates						
Item	Base Applied	Based Amount	Rate	Cost		Published rate
Base Salary Cost				\$ 100,000		
Paid absence						
Fringe	Base Salary			39.7% \$ 39,700		39.7%
Total Direct				\$ 139,700		
Org Burden	Total Direct	\$ 139,700		8.83% \$ 12,336		
Distributed Power	Total Direct	\$ 139,700		1.20% \$ 1,676		
Common Support G & A	Total Direct & org burden	\$ 152,036		32.35% \$ 49,183		32.35%
Traditional G & A	Total Direct & org burden	\$ 152,036		7.38% \$ 11,220		8.25%
LDRD	Total Direct & org burden & OH	\$ 214,116		2.30% \$ 4,925		2.30%
Total Fully Burdened Cost				\$ 219,040		
Labor Multiplier					2.190403	

Note: Rates calculated in tables represent the rates at year end. The last published rates are provided for reference.

Table 1 (same as Table 1.iii.4, volume 1) Labor multiplier rates for FY15 and FY16.

That \$12.3k then goes to the org burden pool which pays for the common functions, including helping to pay for the FTE in business operations (amongst other things). Hence the **cost** of that business operations FTE is distributed throughout the organization, but the **work** is shown in Facility Management and Business Operations since that is what that FTE is doing.

If there were only BES-SUF funded work going on at NSLS-II, then this exercise would just be an accountancy exercise, moving money around and there would be nothing to be gained from this burden. However, the other funded work (NIH/BER grants, SPP work, LDRD, etc) also gets charged the org burden - since this work also receives some of the benefit of the common functions, including the business office, and should therefore share the cost. As a result, the common functions are cheaper to BES-SUF because a fraction of those costs are paid for by the other funded work paying org burden.

In table 2 below, we show the total costs recovered by org burden for FY15 and FY16, together with projected costs for FY17 and where those costs came from. Note that the space costs are the space charges associated with org burdened funded labor – for example the office space of a business operations admin. The small reserve of \$200k in FY17 is a reserve to ensure that the rate is sufficient. As discussed above, the account must go to zero at the end of the year, so if this reserve is not required, it is returned to the original accounts as a “spreadback” and a retroactive lowering of the rate.

NSLS II Org Burden						
	FY15- Actual		FY16- Actual		FY17-Estimated	
	FTE's	\$K	FTE's	\$K	FTE's	\$K
ACCEL	0.48	\$ 134.7	0.60	\$ 179.1	0.48	\$ 130.4
BUS OPS	8.67	\$ 1,053.3	8.81	\$ 1,032.0	10.38	\$ 1,266.3
ESH	0.00	\$ -	0.40	\$ 65.0	0.50	\$ 81.4
FACIL MGMT	1.14	\$ 126.0	1.17	\$ 132.8	1.02	\$ 114.2
HR	0.65	\$ 134.3	2.52	\$ 325.4	1.85	\$ 262.5
IT SUPPORT	0.00	\$ -	1.90	\$ 283.4	2.88	\$ 434.6
MGMT	2.62	\$ 668.6	2.09	\$ 562.4	1.70	\$ 566.7
PHOTON	1.39	\$ 347.9	1.23	\$ 332.4	1.35	\$ 367.4
QA	2.05	\$ 364.7	2.09	\$ 412.7	2.00	\$ 397.9
TOTAL	17.00	\$ 2,829.4	20.81	\$ 3,325.2	22.14	\$ 3,621.3
MATERIALS		\$ 227.90		\$ 27.10		\$ 265.30
SPACE		\$ 95.10		\$ 84.90		\$ 84.10
RESERVE		\$ -		\$ -		\$ 200.00
O/B RATE		7.43%		8.83%		9.50%

Table 2: Org burden costs by fiscal year, together with the rate required to cover those costs. Note this reflects all org burden costs for the NSLS-II department, not just those reported in the present review.

In table 3 below, we show how the FTEs paid for by org burden are distributed across the different functions within NSLS-II

Operations Category	Resource	FY2015						FY2016						FY2017					
		BES-SUF Operation Funding			Other Funding Source			BES-SUF Operation Funding			Other Funding Source			BES-SUF Operation Funding			Other Funding Source		
		FTEs	Direct (\$K)	Burdened (\$K)	FTEs	Direct (\$K)	Burdened (\$K)	FTEs	Direct (\$K)	Burdened (\$K)	FTEs	Direct (\$K)	Burdened (\$K)	FTEs	Direct (\$K)	Burdened (\$K)	FTEs	Direct (\$K)	Burdened (\$K)
Total Operations	Total	14.78	0.	0.	1.09	0.	0.	18.57	0.	0.	1.85	0.	0.	19.60	0.	0.	2.14	0.	0.00
Facility Management and Business Operations	Total	11.37	0.	0.	0.84	0.	0.	14.71	0.	0.	1.46	0.	0.	15.79	0.	0.	1.73	0.	0.
	Manager Effort	1.22			0.09			1.2			0.12			1.32			0.14		
	Scientist Effort	0																	
	Engineer Effort	0						1.7			0.17			2.55			0.28		
	Technical Effort	0.99			0.07			1.04			0.1			0.9			0.10		
	Post Doc Effort																		
	Student Effort																		
	Admin Effort	9.16			0.68			10.77			1.07			11.02			1.21		
	M&S																		
	Travel																		
	Space Charge																		
	Power																		
	Improvements and Upgrades (CE, AP, GPP etc.) Equipment																		
	Improvements and Upgrades (CE, AP, GPP etc.) Labor (non-add)																		
	R&D Equipment																		
	R&D Program Labor (non-add)																		
Accelerator Operations	Total	0.42	0.	0.	0.03	0.	0.	0.54	0.	0.	0.05	0.	0.	0.42	0.	0.	0.05	0.	0.
	Manager Effort	0.18			0.01			0.2			0.02			0.09			0.01		
	Scientist Effort	0.14			0.01			0.34			0.03			0.33			0.04		
	Engineer Effort	0.1			0.01														
	Technical Effort																		
	Post Doc Effort																		
	Student Effort																		
	Admin Effort																		
	M&S																		
	Travel																		
	Space Charge																		
	Power																		
	Improvements and Upgrades (CE, AP, GPP etc.) Equipment																		
	Improvements and Upgrades (CE, AP, GPP etc.) Labor (non-add)																		
	R&D Equipment																		
	R&D Program Labor (non-add)																		
Beamline Operations	Total	1.21	0.	0.	0.09	0.	0.	1.09	0.	0.	0.11	0.	0.	1.18	0.	0.	0.12	0.	0.
	Manager Effort	0.22			0.02			0.22			0.02			0.22			0.02		
	Scientist Effort	0.99			0.07			0.82			0.08			0.81			0.09		
	Engineer Effort							0.05			0.01			0.13			0.01		
	Technical Effort																		
	Post Doc Effort																		
	Student Effort																		
	Admin Effort																		
	M&S																		
	Travel																		
	Space Charge																		
	Power																		
	Improvements and Upgrades (CE, AP, GPP etc.) Equipment																		
	Improvements and Upgrades (CE, AP, GPP etc.) Labor (non-add)																		
	Beamline Build Up Equipment																		
	Beamline Build Up Labor (non-add)																		
	R&D Equipment																		
	R&D Program Labor (non-add)																		
ES&H/QA	Total	1.78	0.	0.	0.13	0.	0.	2.23	0.	0.	0.23	0.	0.	2.21	0.	0.	0.24	0.	0.
	Manager Effort																		
	Scientist Effort																		
	Engineer Effort	1.78			0.13			1.87			0.19			1.77			0.19		
	Technical Effort																		
	Post Doc Effort																		
	Student Effort																		
	Admin Effort							0.36			0.04			0.44			0.05		
	M&S																		
	Travel																		
	Space Charge																		
	Power																		
	Improvements and Upgrades (CE, AP, GPP etc.) Equipment																		
	Improvements and Upgrades (CE, AP, GPP etc.) Labor (non-add)																		
	R&D Equipment																		
	R&D Program Labor (non-add)																		

Table 3: The FTEs paid for by org burden by fiscal year.

**Table 4 (same as table 1.iii.9) FY2015-FY2016 Operation Budget Details and FY2017
Operation Budget Projections**